

WHAT IS CLAIMED IS:

- 1 Sub a2> 1. A method for a receiver to provide access to a system time clock
2 (STC) to a decoder, the method comprising:
3 (a) receiving data from the decoder into a first register in a bus interface,
4 where the bus interface couples the receiver to a bus;
5 (b) latching a timestamp of the STC into a second register in the bus
6 interface after receiving the data; and
7 (c) providing the timestamp to the decoder by way of the second register.
- 1 2. The method according to claim 1 wherein the decoder is part of an
2 audio-visual interface.
- 1 3. The method according to claim 1 wherein the decoder is part of a
2 computer network interface.
- 1 4. A method for synchronizing a digital video system including a
2 transmitter, a receiver, and a decoder, the method comprising:
3 (a) receiving a first transport packet from the transmitter;
4 (b) capturing a first system time clock (STC) timestamp at a start of
5 receiving the first transport packet, the first STC timestamp being captured into a latch;
6 (c) obtaining a program clock reference (PCR) timestamp from the
7 transport packet;
8 (d) comparing the first STC timestamp to the PCR timestamp to generate
9 a comparison result; and
10 (e) adjusting an STC frequency based on the comparison result in order to
11 maintain synchronization between the receiver and the transmitter.
- 1 5. The method according to claim 4 wherein the method is
2 accomplished in the receiver.
- 1 6. The method according to claim 4 further comprising:
2 (a) capturing a system timestamp with the decoder; and
3 (b) adjusting the system timestamp with a scaled offset based on a
4 message delay time between the decoder and the receiver to maintain synchronization
5 between the decoder and the receiver.

1 7. The method according to claim 4 further comprising:

(a) receiving data from the decoder into a first register in a bus interface, wherein the decoder is coupled to a communication bus, and where the bus interface couples the receiver to the communication bus;

5 (b) latching a second STC timestamp into a second register in the bus
6 interface after receiving the data from the decoder; and

7 (c) providing the second STC timestamp to the decoder by way of the
8 second register.

1 8. The method according to claim 4 wherein the decoder is part of an
2 audio-visual interface.

1 9. The method according to claim 4 wherein the decoder is part of a
2 computer network interface.

1 10. A system for a receiver to provide access to a system time clock
2 (STC) to a decoder, the system comprising:

3 (a) a communication bus coupled to the decoder;

4 (b) a bus interface in the receiver, the bus interface coupling the receiver
5 to the communication bus;

6 (c) a first register in the bus interface, the first register being adapted to
7 receive data across the communication bus from the decoder; and

8 (d) a second register in the bus interface, the second register being adapted
9 to latch a timestamp of the STC after the first register receives the data and to provide the
10 timestamp to the decoder by way of the communication bus.

1 11. The system according to claim 10 wherein the decoder is part of an
2 audio-visual interface.

1 12. The system according to claim 10 wherein the decoder is part of a
2 computer network interface.

1 13. A system for synchronizing a digital video transmitter, receiver,
2 and decoder, the system comprising:

(a) a parser adapted to obtain a program clock/reference (PCR) timestamp from a first transport packet, the first transport packet including the PCR timestamp;

(b) a first latch coupled to the parser, the first latch being adapted to capture a first system time clock (STC) timestamp near a beginning of receipt of a first transport packet by the receiver;

(c) a comparison device coupled to the parser and to the latch, the comparison device being configured to compare the STC timestamp to the PCR timestamp so as to generate a comparison result; and

(d) a first adjuster coupled to the comparison device, the first adjuster being adapted to adjust a frequency of the system time clock based on the comparison result in order to maintain the synchronization between the receiver and the transmitter.

14. The system according to claim 13 wherein the parser and latch are in the receiver.

15. The system according to claim 13 further comprising:

(a) a second latch in the decoder, the second latch being adapted to capture a system timestamp; and

(b) a second adjuster coupled to the decoder, the second adjuster being adapted to adjust the system timestamp with a scaled offset based on a message delay time between the decoder and the receiver to maintain synchronization between the decoder and the receiver.

16. The system according to claim 13 further comprising:

(a) a first register in a bus interface, the first register being adapted to receive data from the decoder, where the decoder is coupled to a communication bus, and where the bus interface couples the receiver to the communication bus; and

(b) a second register in the bus interface, the second register being adapted to latch a second STC timestamp after the first register receives the data from the decoder, wherein the second STC timestamp is provided to the decoder by way of the second register.

17. The system according to claim 13 wherein the decoder is part of an audio-visual interface.

1 18. The system according to claim 13 wherein the decoder is part of a
2 computer network interface.